STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 139768

TO:	From:
James Schultz Location: REM/2D18/2C18 Art Unit: 1635 Wednesday, December 08, 2004 Case Serial Number: 09/920394	David Schreiber Location: Biotech-Chem Library Remsen E01A61 Phone: 272-2526 david.schreiber@uspto.gov

Search Notes

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: _____ Examiner # :_____ Date: _____
Art Unit: _____ Phone Number 30_____ Serial Number: _____
Mail Box and Bldg/Room Location _____ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: D. Schreiber	NA Sequence (#) 11	STN _____
Searcher Phone #: 272-2526	AA Sequence (#) _____	Dialog _____
Searcher Location: Remsen 801/4G1	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up _____	Bibliographic _____	Dr.Link _____
Date Completed 12/8	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time 15	Fulltext _____	Sequence Systems Compugen
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time 61	Other _____	Other (specify) _____

PTO-1590 (8-01)

139768

Schreiber, David

From: Schultz, James
Sent: Wednesday, November 17, 2004 9:01 AM
To: Schreiber, David
Subject: Score over length search 09/920,394

Hi David,
I need a score over length nucleotide sequence search on nucleobases 14 through 1741 of SEQ ID NO:3 in the above entitled case. I need the lower and upper limits to be 8 and 50, respectively, I only need hits that are 100% complementary, and please transfer as many hits into the excel program as possible. No need to search the interference databases at this time.

Thanks,
Doug Schultz

James Douglas Schultz, PhD
AU 1635 (Biotechnology)
Patent Examiner
United States Patent and Trademark Office
(Office) REM 2D18
(Mail) REM 2C18
(571) 272-0763

1 46 43
2 4 49 10
3 4 46 54
4 ~~4~~ 43 51 46 32
5 P 46 03
~~5 4~~ 45 41
6 P 49 55
5 1
5 P 31 55

SCORE OVER LENGTH SEARCHES

Attached is a score over length search. This search was developed to overcome limitations in most standard search systems which favor large sequences with high scoring, but lesser overall identity over smaller sequences with higher overall identity. This search is especially useful for relatively small nucleic acid or polypeptide target sequences (antisense, fragments, probes, primers, RNAi, epitopes, haptens, etc.) claimed functionally via a form of hybridization and/or identity language and having defined upper and lower polynucleotide and or polypeptide length limits.

The score over length search is performed by first running the query sequence using examiner-specified identity and polynucleotide or protein length limit parameters, and saving 65,000 hits and 0 alignments from each desired database. The resulting output is reformatted using a Microsoft Word macro and is imported into Excel. The summary table data are then sorted by the ratio of score of each hit sequence divided by its length and the accession numbers for all hits below the examiner's desired score over length parameters are deleted. The remaining accession numbers are used to pull the corresponding sequences from the databases into subdatabases enriched for good hits and the query sequence is re-run against these subdatabases to yield the final results.

The score over length cutoff for this search is 100%.

Examiner Please Note: This cover sheet should be included when submitting results to be scanned.

STIC SEARCH RESULTS FEEDBACK FORM

Biotech-Chem Library

Questions about the scope or the results of the search? Contact ***the searcher or contact***:

Mary Hale, Information Branch Supervisor
Remsen Bldg. 01 D86
571-272-2507

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1610*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC-Biotech-Chem Library Remsen Bldg.

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: December 8, 2004, 07:21:18 ; Search time 0.001 Seconds
(without alignments)
739.584 Million cell updates/sec

Title: US-09-920-394-3
Perfect score: 1728
Sequence: 1 tgtcgcccttcacgatgtgg.....catagagctgtgaatgaaga 1728

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 0.5

Searched: 9 seqs, 214 residues

Total number of hits satisfying chosen parameters: 18

Minimum DB seq length: 8
Maximum DB seq length: 50

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 9 summaries

Database : rge3.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	40	2.3	40	1	AX092543	ACCESSION:AX092543
2	30	1.7	30	1	BD144801	ACCESSION:BD144801
3	26	1.5	26	1	BD182058	ACCESSION:BD182058
c 4	25	1.4	25	1	AX092546	ACCESSION:AX092546
5	22	1.3	22	1	BD144866	ACCESSION:BD144866
c 6	21	1.2	21	1	BD144867	ACCESSION:BD144867
c 7	19	1.1	19	1	BD182057	ACCESSION:BD182057
8	18	1.0	18	1	BD182056	ACCESSION:BD182056
9	13	0.8	13	1	CQ794312	ACCESSION:CQ794312

ALIGNMENTS

RESULT 1
AX092543
LOCUS AX092543 40 bp DNA linear PAT 21-MAR-2001
DEFINITION Sequence 4 from Patent WO0116358.
ACCESSION AX092543
VERSION AX092543.1 GI:13444635
KEYWORDS .
SOURCE synthetic construct
ORGANISM synthetic construct
artificial sequences.
REFERENCE 1
AUTHORS Borg-Capra,C.S., Lehner,R.J. and Vance,D.E.
TITLE Method of screening for triacyglycerol hydrolase inhibitors
JOURNAL Patent: WO 0116358-A 4 08-MAR-2001;
GLAXO GROUP LIMITED (GB) ; THE GOVERNORS OF THE UNIVERSITY OF ALBERTA (CA)
FEATURES Location/Qualifiers
source 1. .40
/organism="synthetic construct"
/mol_type="unassigned DNA"
/db_xref="taxon:32630"
/note="Oligo"

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Best Local Similarity 100.0%; Pred. No. 0.31;
Matches 40; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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            ||||||||||||||||||||||||||||||||||||||||
Db        1 GCATCTGGGGATTCTTCAGCACAGGGGATGAACACAGCCG 40
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RESULT 2
BD144801
LOCUS BD144801 30 bp DNA linear PAT 17-JAN-2003
DEFINITION A method of detecting human phase i enzymes of drug-metabolizing and a probe and a kit therefor.
ACCESSION BD144801
VERSION BD144801.1 GI:27850559
KEYWORDS JP 2002142780-A/13.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 30)
AUTHORS Nishimura,M., Yaguchi,H., Naito,S. and Hiraoka,I.
TITLE A method of detecting human phase i enzymes of drug-metabolizing and a probe and a kit therefor
JOURNAL Patent: JP 2002142780-A 13 21-MAY-2002;
OTSUKA PHARMACEUTICAL FACTORY INC
COMMENT OS Homo sapiens (human)
PN JP 2002142780-A/13
PD 21-MAY-2002
PF 28-AUG-2001 JP 2001257338
PI MASUHIRO NISHIMURA,HIROSHI YAGUCHI,SHINSAKU NAITO,ISAO HIRAOKA
PC C12N15/09,C12Q1/68,C12N15/00
CC human CES1 gene
FH Key Location/Qualifiers
FT source 1. .30
FT /organism='Homo sapiens (human)'.
FEATURES Location/Qualifiers
source 1. .30
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"

Query Match 1.7%; Score 30; DB 1; Length 30;
Best Local Similarity 100.0%; Pred. No. 1.2;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy      1006 ATGCTGCTGCTGAAAACACCTGAAGAGCTT 1035
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Db         1 ATGCTGCTGCTGAAAACACCTGAAGAGCTT 30
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RESULT 3
BD182058
LOCUS BD182058 26 bp DNA linear PAT 15-MAY-2003
DEFINITION ABC expression promoting agent.
ACCESSION BD182058
VERSION BD182058.1 GI:30792976
KEYWORDS WO 02087580-A/24.
SOURCE synthetic construct
ORGANISM synthetic construct
artificial sequences.
REFERENCE 1 (bases 1 to 26)
AUTHORS Sugiyama,Y., Fuse,H., Hirakata,M. and Tozawa,R.
TITLE ABC expression promoting agent
JOURNAL Patent: WO 02087580-A 24 07-NOV-2002;
TAKEDA CHEMICAL INDUSTRIES LTD,YASUO SUGIYAMA,HIROMITSU FUSE, MASAO HIRAKATA,RYUICHI TOZAWA
COMMENT OS Artificial Sequence

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            PN   WO 02087580-A/24
            PD   07-NOV-2002
            PF   24-APR-2002 WO 2002JP004072
            PR   25-APR-2001 JP 01P   128222
            PI   YASUO SUGIYAMA,HIROMITSU FUSE,MASAO HIRAKATA,RYUICHI TOZAWA PC
              A61K31/4439,A61K31/42,A61K45/00,A61P3/06,A61P9/00,A61P9/10// PC
            C07D417/12,
            PC   C07D413/12,C07D263/32
            CC   ABC expression promoting agent
            FH   Key             Location/Qualifiers
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            FT                   /organism='Artificial Sequence'.
FEATURES             Location/Qualifiers
     source          1. .26
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                     /mol_type="genomic DNA"
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  Matches   26;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        834 TGCTATCACTGCTGGGTGCAAAACCA 859
              ||||||||||||||||||||||||||
Db          1 TGCTATCACTGCTGGGTGCAAAACCA 26


RESULT 4
AX092546/c
LOCUS       AX092546                  25 bp    DNA     linear   PAT 21-MAR-2001
DEFINITION  Sequence 7 from Patent WO0116358.
ACCESSION   AX092546
VERSION     AX092546.1  GI:13444638
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            artificial sequences.
REFERENCE   1
  AUTHORS   Borg-Capra,C.S., Lehner,R.J. and Vance,D.E.
  TITLE     Method of screening for triacyglycerol hydrolase inhibitors
  JOURNAL   Patent: WO 0116358-A 7 08-MAR-2001;
            GLAXO GROUP LIMITED (GB) ; THE GOVERNORS OF THE UNIVERSITY OF
            ALBERTA (CA)
FEATURES             Location/Qualifiers
     source          1. .25
                     /organism="synthetic construct"
                     /mol_type="unassigned DNA"
                     /db_xref="taxon:32630"
                     /note="Oligo"

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  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1710 CCAGACAGAACACATAGAGCTGTGA 1734
              |||||||||||||||||||||||||
Db         25 CCAGACAGAACACATAGAGCTGTGA 1


RESULT 5
BD144866
LOCUS       BD144866                  22 bp    DNA     linear   PAT 17-JAN-2003
DEFINITION  A method of detecting human phase i enzymes of drug-metabolizing
            and a probe and a kit therefor.
ACCESSION   BD144866
VERSION     BD144866.1  GI:27850624
KEYWORDS    JP 2002142780-A/78.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 22)
  AUTHORS   Nishimura,M., Yaguchi,H., Naito,S. and Hiraoka,I.
  TITLE     A method of detecting human phase i enzymes of drug-metabolizing
            and a probe and a kit therefor
  JOURNAL   Patent: JP 2002142780-A 78 21-MAY-2002;
            OTSUKA PHARMACEUTICAL FACTORY INC
COMMENT     OS   Homo sapiens (human)
            PN   JP 2002142780-A/78
            PD   21-MAY-2002
            PF   28-AUG-2001 JP 2001257338
            PI   MASUHIRO NISHIMURA,HIROSHI YAGUCHI,SHINSAKU NAITO,ISAO HIRAOKA
            PC   C12N15/09,C12Q1/68,C12N15/00
            CC   human CES1 gene
            FH   Key             Location/Qualifiers
            FT   source          1. .22
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FEATURES             Location/Qualifiers
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  Matches   22;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        965 CCAGAGAGAGTCAACCCCTTCT 986
              ||||||||||||||||||||||
Db          1 CCAGAGAGAGTCAACCCCTTCT 22


RESULT 6
BD144867/c
LOCUS       BD144867                  21 bp    DNA     linear   PAT 17-JAN-2003
DEFINITION  A method of detecting human phase i enzymes of drug-metabolizing
            and a probe and a kit therefor.
ACCESSION   BD144867
VERSION     BD144867.1  GI:27850625
KEYWORDS    JP 2002142780-A/79.
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1  (bases 1 to 21)
  AUTHORS   Nishimura,M., Yaguchi,H., Naito,S. and Hiraoka,I.
  TITLE     A method of detecting human phase i enzymes of drug-metabolizing
            and a probe and a kit therefor
  JOURNAL   Patent: JP 2002142780-A 79 21-MAY-2002;
            OTSUKA PHARMACEUTICAL FACTORY INC
COMMENT     OS   Homo sapiens (human)
            PN   JP 2002142780-A/79
            PD   21-MAY-2002
            PF   28-AUG-2001 JP 2001257338
            PI   MASUHIRO NISHIMURA,HIROSHI YAGUCHI,SHINSAKU NAITO,ISAO HIRAOKA
            PC   C12N15/09,C12Q1/68,C12N15/00
            CC   human CES1 gene
            FH   Key             Location/Qualifiers
            FT   source          1. .21
            FT                   /organism='Homo sapiens (human)'.
FEATURES             Location/Qualifiers
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                     /db_xref="taxon:9606"

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  Best Local Similarity   100.0%;  Pred. No. 4;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1071 GGTCGGAATTAACAAGCAGGA 1091
              |||||||||||||||||||||
Db         21 GGTCGGAATTAACAAGCAGGA 1


RESULT 7
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```
BD182057/c
LOCUS       BD182057                19 bp    DNA     linear   PAT 15-MAY-2003
DEFINITION  ABC expression promoting agent.
ACCESSION   BD182057
VERSION     BD182057.1  GI:30792975
KEYWORDS    WO 02087580-A/23.
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            artificial sequences.
REFERENCE   1  (bases 1 to 19)
  AUTHORS   Sugiyama,Y., Fuse,H., Hirakata,M. and Tozawa,R.
  TITLE     ABC expression promoting agent
  JOURNAL   Patent: WO 02087580-A 23 07-NOV-2002;
            TAKEDA CHEMICAL INDUSTRIES LTD,YASUO SUGIYAMA,HIROMITSU FUSE, MASAO
            HIRAKATA,RYUICHI TOZAWA
COMMENT     OS   Artificial Sequence
            PN   WO 02087580-A/23
            PD   07-NOV-2002
            PF   24-APR-2002 WO 2002JP004072
            PR   25-APR-2001 JP 01P   128222
            PI   YASUO SUGIYAMA,HIROMITSU FUSE,MASAO HIRAKATA,RYUICHI TOZAWA PC
              A61K31/4439,A61K31/42,A61K45/00,A61P3/06,A61P9/00,A61P9/10// PC
            C07D417/12,
            PC   C07D413/12,C07D263/32
            CC   ABC expression promoting agent
            FH   Key             Location/Qualifiers
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            FT                   /organism='Artificial Sequence'.
FEATURES             Location/Qualifiers
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                     /mol_type="genomic DNA"
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Qy        874 ATGGTTCACTGCCTGCGAC 892
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Db         19 ATGGTTCACTGCCTGCGAC 1


RESULT 8
BD182056
LOCUS       BD182056                18 bp    DNA     linear   PAT 15-MAY-2003
DEFINITION  ABC expression promoting agent.
ACCESSION   BD182056
VERSION     BD182056.1  GI:30792974
KEYWORDS    WO 02087580-A/22.
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            artificial sequences.
REFERENCE   1  (bases 1 to 18)
  AUTHORS   Sugiyama,Y., Fuse,H., Hirakata,M. and Tozawa,R.
  TITLE     ABC expression promoting agent
  JOURNAL   Patent: WO 02087580-A 22 07-NOV-2002;
            TAKEDA CHEMICAL INDUSTRIES LTD,YASUO SUGIYAMA,HIROMITSU FUSE, MASAO
            HIRAKATA,RYUICHI TOZAWA
COMMENT     OS   Artificial Sequence
            PN   WO 02087580-A/22
            PD   07-NOV-2002
            PF   24-APR-2002 WO 2002JP004072
            PR   25-APR-2001 JP 01P   128222
            PI   YASUO SUGIYAMA,HIROMITSU FUSE,MASAO HIRAKATA,RYUICHI TOZAWA PC
              A61K31/4439,A61K31/42,A61K45/00,A61P3/06,A61P9/00,A61P9/10// PC
            C07D417/12,
            PC   C07D413/12,C07D263/32
            CC   ABC expression promoting agent
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FEATURES             Location/Qualifiers
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Qy        815 AGCCCTTGGCTGAGCAAA 832
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Db          1 AGCCCTTGGCTGAGCAAA 18


RESULT 9
CQ794312
LOCUS       CQ794312                13 bp    DNA     linear   PAT 19-APR-2004
DEFINITION  Sequence 53 from Patent WO2004024953.
ACCESSION   CQ794312
VERSION     CQ794312.1  GI:46406947
KEYWORDS    .
SOURCE      Homo sapiens (human)
  ORGANISM  Homo sapiens
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
            Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE   1
  AUTHORS   Yamamoto,M., Yamamoto,N., Hirose,K. and Sakai,J.
  TITLE     Method for preparation of cdna tags for identifying expressed genes
            and method for analysis of gene expression
  JOURNAL   Patent: WO 2004024953-A 53 25-MAR-2004;
            Kureha Chemical Industry Co., Ltd. (JP); Yamamoto, Mikio (JP);
            Yamamoto, Naoki (JP)
FEATURES             Location/Qualifiers
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                     /mol_type="unassigned DNA"
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Qy        979 CCCCTTCTGGGCA 991
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Db          1 CCCCTTCTGGGCA 13


Search completed: December  8, 2004, 07:21:19
Job time : 1 secs
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GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: December 8, 2004, 07:22:57 ; Search time 0.001 Seconds
(without alignments)
2526.336 Million cell updates/sec

Title: US-09-920-394-3
Perfect score: 1728
Sequence: 1 tgtcgcccttcacgatgtgg.....catagagctgtgaatgaaga 1728

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 0.5

Searched: 33 seqs, 731 residues

Total number of hits satisfying chosen parameters: 66

Minimum DB seq length: 8
Maximum DB seq length: 50

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 33 summaries

Database : rng3.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	50	2.9	50	1	ABZ74886	Human acyl coenzym
	2	40	2.3	40	1	AAF75811	Triacylglycerol hy
	3	30	1.7	30	1	ABT04547	Human CES1 gene pr
	4	26	1.5	26	1	ABZ69755	Human CEH Taqman p
c	5	25	1.4	25	1	AAF75814	Triacylglycerol hy
	6	22	1.3	22	1	ABT04612	Human CES1 gene pr
c	7	21	1.2	21	1	ABT04613	Human CES1 gene pr
c	8	20	1.2	20	1	ABZ74913	Human acyl coenzym
c	9	20	1.2	20	1	ABZ74902	Human acyl coenzym
c	10	20	1.2	20	1	ABZ74916	Human acyl coenzym
c	11	20	1.2	20	1	ABZ74907	Human acyl coenzym
c	12	20	1.2	20	1	ABZ74911	Human acyl coenzym
c	13	20	1.2	20	1	ABZ74912	Human acyl coenzym
c	14	20	1.2	20	1	ABZ74897	Human acyl coenzym
c	15	20	1.2	20	1	ABZ74901	Human acyl coenzym
c	16	20	1.2	20	1	ABZ74899	Human acyl coenzym
c	17	20	1.2	20	1	ABZ74900	Human acyl coenzym
c	18	20	1.2	20	1	ABZ74909	Human acyl coenzym
c	19	20	1.2	20	1	ABZ74898	Human acyl coenzym
c	20	20	1.2	20	1	ABZ74904	Human acyl coenzym
c	21	20	1.2	20	1	ABZ74908	Human acyl coenzym
c	22	20	1.2	20	1	ABZ74910	Human acyl coenzym
	23	20	1.2	20	1	ABZ74884	Human acyl coenzym
c	24	20	1.2	20	1	ABZ74885	Human acyl coenzym
c	25	20	1.2	20	1	ABZ74906	Human acyl coenzym
c	26	20	1.2	20	1	ABZ74914	Human acyl coenzym
c	27	20	1.2	20	1	ABZ74915	Human acyl coenzym
c	28	20	1.2	20	1	ABZ74905	Human acyl coenzym
c	29	20	1.2	20	1	ABZ74929	Mouse acyl coenzym
c	30	20	1.2	20	1	ABZ74903	Human acyl coenzym
c	31	20	1.2	20	1	ABZ74917	Human acyl coenzym
c	32	19	1.1	19	1	ABZ69754	Human CEH antisens
	33	18	1.0	18	1	ABZ69753	Human CEH sense PC

ALIGNMENTS

RESULT 1
ABZ74886
ID ABZ74886 standard; DNA; 50 BP.
XX
AC ABZ74886;
XX
DT 10-MAY-2003 (first entry)
XX
DE Human acyl coenzyme A cholesterol acyltransferase-1 probe #6.
XX
KW Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW free sterol regulation; cholesterol metabolism disorder;
KW lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW cardiant; expression inhibition; antisense therapy;
KW quantitative real-time PCR; probe; ss.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT modified_base 1
FT /*tag= a
FT /mod_base= OTHER
FT /note= "Conjugated to fluorescent reporter dye FAM"
FT modified_base 50
FT /*tag= b
FT /mod_base= OTHER
FT /note= "Conjugated to fluorescent quencher dye TAMRA"
XX
PN WO2003012144-A1.
XX
PD 13-FEB-2003.
XX
PF 17-JUL-2002; 2002WO-US022696.
XX
PR 01-AUG-2001; 2001US-00920394.
XX
PA (ISIS-) ISIS PHARM INC.
XX
PI Crooke RM, Graham MJ, Lemonidis KM;
XX
DR WPI; 2003-239532/23.
XX
PT New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT coenzyme A cholesterol acyltransferase-1, useful for treating a
PT disease/condition involving abnormal lipid or cholesterol metabolism,
PT e.g. atherosclerosis.
XX
PS Example 13; Page 87; 117pp; English.
XX
CC This sequence represents a human acyl coenzyme A cholesterol
CC acyltransferase-1 probe used in quantitative real-time PCR with primers
CC ABZ74884-ABZ74885 in an exemplification of the present invention. The
CC invention relates to antisense oligonucleotides targeted to the human or
CC mouse acyl coenzyme A cholesterol acyltransferase-1 gene, which inhibit
CC its expression. A series of oligonucleotides (ABZ74897-ABZ74942) were
CC designed to target different regions of the human or murine acyl coenzyme
CC A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC on mRNA levels by quantitative real-time PCR. GAPDH (glyceraldehyde-3-
CC phosphate) mRNA levels were measured as a control. Acyl coenzyme A
CC cholesterol acyltransferase (ACAT) enzymes catalyse the synthesis of
CC cholesterol esters from free cholesterol and fatty acyl-CoA, and are also
CC involved in regulating the concentration of cellular free sterols. The
CC human acyl coenzyme A cholesterol acyltransferase-1 is the predominant
CC ACAT isoform in the liver, and the gene encoding it is located on
CC chromosome 1q25, although a subsequent study has indicated that one acyl
CC coenzyme A cholesterol acyltransferase-1 mRNA is produced from genes on
CC two different chromosomes (chromosomes 1 and 7) by a novel RNA

```
CC   recombination mechanism involving trans-splicing of the two discontinuous
CC   precursor mRNAs. The oligonucleotides of the invention are useful for the
CC   prevention and treatment of conditions associated with acyl coenzyme A
CC   cholesterol acyltransferase-1, such as disorders involving abnormal lipid
CC   or cholesterol metabolism, e.g., atherosclerosis or cardiovascular
CC   disease. They are also useful in research and diagnostics for modulating
CC   the expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 50 BP; 14 A; 13 C; 16 G; 7 T; 0 U; 0 Other;

  Query Match             2.9%;  Score 50;  DB 1;  Length 50;
  Best Local Similarity   100.0%;  Pred. No. 0.91;
  Matches   50;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1601 AAGGGTATCTGCAGATTGGTGCCAACACCCAGGCGGCCCAGAAGCTGAAG 1650
             ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AAGGGTATCTGCAGATTGGTGCCAACACCCAGGCGGCCCAGAAGCTGAAG 50


RESULT 2
AAF75811
ID   AAF75811 standard; DNA; 40 BP.
XX
AC   AAF75811;
XX
DT   16-MAY-2001  (first entry)
XX
DE   Triacylglycerol hydrolase, TGH, oligonucleotide P-TGHI.
XX
KW   TGH; triacylglycerol hydrolase; carboxylesterase; EST-1; VLDL; rat;
KW   very low density lipoprotein; atherosclerosis; hypercholesterolaemia;
KW   hyperbetalipoproteinaemia; non-insulin dependent diabetes mellitus;
KW   coronary arterial disease; peripheral vascular disease; pancreatitis;
KW   obesity; mixed dyslipidaemia; cerebro-vascular disease; mouse; pig; ss.
XX
OS   Mus sp.
OS   Rattus sp.
OS   Sus scrofa.
XX
PN   WO200116358-A2.
XX
PD   08-MAR-2001.
XX
PF   24-AUG-2000; 2000WO-EP008262.
XX
PR   28-AUG-1999;   99GB-00020334.
XX
PA   (GLAX ) GLAXO GROUP LTD.
PA   (UYAL-) UNIV ALBERTA.
XX
PI   Borg-Capra CS,  Lehner RJ,  Vance DE;
XX
DR   WPI; 2001-235119/24.
XX
PT   Identifying compounds for treating elevated circulating levels of
PT   triglyceride, very low density lipoprotein/low density lipoprotein-
PT   cholesterol and ApoB-100, comprises identifying triacylglycerol hydrolase
PT   inhibitors.
XX
PS   Disclosure; Page 10; 28pp; English.
XX
CC   The present invention relates to a method for identifying compounds
CC   useful in the treatment of conditions resulting from elevated circulating
CC   levels of: triglycerides, apoB-100, and/or very low density lipoproteins
CC   (VLDL)/ low density lipoproteins (LDL)-cholesterol. The method comprises
CC   determining whether the compound inhibits triacylglycerol hydrolase (TGH)
CC   activity. TGH has previously been known as carboxylesterase EST-1. It is
CC   thought that TGH may participate in the mobilisation of triacylglycerides
CC   for assembly into VLDL. Inhibitors of TGH are useful for treating
CC   atherosclerosis, hypercholesterolaemia, hyperbetalipoproteinaemia, non-
CC   insulin dependent diabetes mellitus (NIDDM), coronary arterial disease,
CC   peripheral vascular disease, pancreatitis, obesity, mixed dyslipidaemia
CC   and cerebro-vascular disease. The present sequence is an oligonucleotide
CC   which was used to clone human TGH (see AAB73263). The present sequence
CC   was designed using conserved sites between mouse, rat and pig TGH coding
CC   sequences
XX
SQ   Sequence 40 BP; 10 A; 10 C; 13 G; 7 T; 0 U; 0 Other;

  Query Match             2.3%;  Score 40;  DB 1;  Length 40;
  Best Local Similarity   100.0%;  Pred. No. 2.7;
  Matches   40;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        548 GCATCTGGGGATTCTTCAGCACAGGGGATGAACACAGCCG 587
              ||||||||||||||||||||||||||||||||||||||||
Db          1 GCATCTGGGGATTCTTCAGCACAGGGGATGAACACAGCCG 40


RESULT 3
ABT04547
ID   ABT04547 standard; DNA; 30 BP.
XX
AC   ABT04547;
XX
DT   25-SEP-2002  (first entry)
XX
DE   Human CES1 gene probe SEQ ID NO: 13.
XX
KW   Human; drug metabolism; enzyme; probe; ss.
XX
OS   Homo sapiens.
XX
PN   JP2002142780-A.
XX
PD   21-MAY-2002.
XX
PF   28-AUG-2001; 2001JP-00257338.
XX
PR   04-SEP-2000; 2000JP-00267163.
XX
PA   (SAKA ) OTSUKA SEIYAKU KOGYO KK.
XX
DR   WPI; 2002-552472/59.
XX
PT   Measurement of an enzyme participating to the first phase reaction of
PT   drug metabolism, a probe and a kit for it.
XX
PS   Claim 4; Page 18; 36pp; Japanese.
XX
CC   The present invention relates to probes which can be used for the
CC   measurement of an enzyme. The probes can be used for the measurement of
CC   an enzyme participating to the first phase reaction of drug metabolism.
CC   The present sequence is a probe shown in the invention
XX
SQ   Sequence 30 BP; 9 A; 7 C; 7 G; 7 T; 0 U; 0 Other;

  Query Match             1.7%;  Score 30;  DB 1;  Length 30;
  Best Local Similarity   100.0%;  Pred. No. 7.3;
  Matches   30;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1006 ATGCTGCTGCTGAAAACACCTGAAGAGCTT 1035
              ||||||||||||||||||||||||||||||
Db          1 ATGCTGCTGCTGAAAACACCTGAAGAGCTT 30


RESULT 4
ABZ69755
ID   ABZ69755 standard; DNA; 26 BP.
XX
AC   ABZ69755;
XX
DT   04-APR-2003  (first entry)
XX
DE   Human CEH Taqman probe.
XX
KW   Human; ABC-A1; expression promoter; pioglitazone; LXRalpha; ABC-G1;
```

KW ACAT-1; CEH; cardiant; antianginal; antiarteriosclerotic; anorectic;
KW cerebroprotective; hepatotropic; antidiabetic; dermatological;
KW cytostatic; nephrotropic; vasotropic; antiinflammatory; antilipemic;
KW anticoagulant; haemolytic; protozoacide; cholesterol; probe; ss.
XX
OS Homo sapiens.
XX
PN WO200287580-A1.
XX
PD 07-NOV-2002.
XX
PF 24-APR-2002; 2002WO-JP004072.
XX
PR 25-APR-2001; 2001JP-00128222.
XX
PA (TAKE) TAKEDA CHEM IND LTD.
XX
PI Sugiyama Y, Fuse H, Hirakata M, Tozawa R;
XX
DR WPI; 2003-148283/14.
XX
PT ABC-A1 mRNA expression promoter comprises pioglitazone e.g. for
PT controlling cholesterol distribution.
XX
PS Example 4; Page 84; 117pp; Japanese.
XX
CC The invention relates to a novel ABC-A1 mRNA expression promoter
CC comprising pioglitazone. Also included are ABC-A1 mRNA, LXRalpha mRNA,
CC ABC-G1 mRNA, ACAT-1 mRNA and CEH mRNA expression promoters. The novel
CC promoters of the invention have cardiant, antianginal,
CC antiarteriosclerotic, cerebroprotective, hepatotropic, antidiabetic,
CC dermatological, cytostatic, anorectic, nephrotropic, vasotropic,
CC antiinflammatory, antilipemic, anticoagulant, haemolytic, and
CC protozoacide activity. The promoters are useful for controlling
CC cholesterol distribution in vivo and for treating and preventing e.g.
CC diseases associated with low blood high density lipoprotein, Tangier
CC disease, coronary vascular disorders (such as myocardial infarction and
CC angina pectoris), arteriosclerosis, cerebral vascular disorders (such as
CC cerebral infarction), fatty liver, liver sclerosis, diabetic
CC complications, dermatological disorders, leukaemia, joint disease,
CC peripheral vascular disorders, obesity, cerebrotendinous xanthomatosis,
CC glomerular nephritis, restenosis (e.g. after bypass surgery),
CC pancreatitis, hyperlipidaemia, deep vein thrombosis and cerebral malaria.
CC The present sequence represents a probe used in the invention to identify
CC the human CEH cDNA
XX
SQ Sequence 26 BP; 7 A; 7 C; 6 G; 6 T; 0 U; 0 Other;

Query Match 1.5%; Score 26; DB 1; Length 26;
Best Local Similarity 100.0%; Pred. No. 11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 834 TGCTATCACTGCTGGGTGCAAAACCA 859
||||||||||||||||||||||||||
Db 1 TGCTATCACTGCTGGGTGCAAAACCA 26

RESULT 5
AAF75814/c
ID AAF75814 standard; DNA; 25 BP.
XX
AC AAF75814;
XX
DT 16-MAY-2001 (first entry)
XX
DE Triacylglycerol hydrolase, TGH, oligonucleotide hCE3'Rev.
XX
KW TGH; triacylglycerol hydrolase; carboxylesterase; EST-1; VLDL;
KW very low density lipoprotein; atherosclerosis; hypercholesterolaemia;
KW hyperbetalipoproteinaemia; non-insulin dependent diabetes mellitus;
KW coronary arterial disease; peripheral vascular disease; pancreatitis;
KW obesity; mixed dyslipidaemia; cerebro-vascular disease; human; ss.
XX
OS Homo sapiens.
XX
PN WO200116358-A2.
XX
PD 08-MAR-2001.
XX
PF 24-AUG-2000; 2000WO-EP008262.
XX
PR 28-AUG-1999; 99GB-00020334.
XX
PA (GLAX) GLAXO GROUP LTD.
PA (UYAL-) UNIV ALBERTA.
XX
PI Borg-Capra CS, Lehner RJ, Vance DE;
XX
DR WPI; 2001-235119/24.
XX
PT Identifying compounds for treating elevated circulating levels of
PT triglyceride, very low density lipoprotein/low density lipoprotein-
PT cholesterol and ApoB-100, comprises identifying triacylglycerol hydrolase
PT inhibitors.
XX
PS Disclosure; Page 11; 28pp; English.
XX
CC The present invention relates to a method for identifying compounds
CC useful in the treatment of conditions resulting from elevated circulating
CC levels of: triglycerides, apoB-100, and/or very low density lipoproteins
CC (VLDL)/ low density lipoproteins (LDL)-cholesterol. The method comprises
CC determining whether the compound inhibits triacylglycerol hydrolase (TGH)
CC activity. TGH has previously been known as carboxylesterase EST-1. It is
CC thought that TGH may participate in the mobilisation of triacylglycerides
CC for assembly into VLDL. Inhibitors of TGH are useful for treating
CC atherosclerosis, hypercholesterolaemia, hyperbetalipoproteinaemia, non-
CC insulin dependent diabetes mellitus (NIDDM), coronary arterial disease,
CC peripheral vascular disease, pancreatitis, obesity, mixed dyslipidaemia
CC and cerebro-vascular disease. The present sequence is an oligonucleotide
CC which was used to clone human TGH (see AAB73263). The present sequence
CC corresponds to the 3' end of human carboxylesterase I (hCEI)
XX
SQ Sequence 25 BP; 3 A; 6 C; 6 G; 10 T; 0 U; 0 Other;

Query Match 1.4%; Score 25; DB 1; Length 25;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1710 CCAGACAGAACACATAGAGCTGTGA 1734
|||||||||||||||||||||||||
Db 25 CCAGACAGAACACATAGAGCTGTGA 1

RESULT 6
ABT04612
ID ABT04612 standard; DNA; 22 BP.
XX
AC ABT04612;
XX
DT 25-SEP-2002 (first entry)
XX
DE Human CES1 gene probe SEQ ID NO: 78.
XX
KW Human; drug metabolism; enzyme; probe; ss.
XX
OS Homo sapiens.
XX
PN JP2002142780-A.
XX
PD 21-MAY-2002.
XX
PF 28-AUG-2001; 2001JP-00257338.
XX
PR 04-SEP-2000; 2000JP-00267163.
XX
PA (SAKA) OTSUKA SEIYAKU KOGYO KK.

```
XX
DR   WPI; 2002-552472/59.
XX
PT   Measurement of an enzyme participating to the first phase reaction of
PT   drug metabolism, a probe and a kit for it.
XX
PS   Claim 8; Page 26; 36pp; Japanese.
XX
CC   The present invention relates to probes which can be used for the
CC   measurement of an enzyme. The probes can be used for the measurement of
CC   an enzyme participating to the first phase reaction of drug metabolism.
CC   The present sequence is a probe shown in the invention
XX
SQ   Sequence 22 BP; 6 A; 8 C; 4 G; 4 T; 0 U; 0 Other;

  Query Match             1.3%;  Score 22;  DB 1;  Length 22;
  Best Local Similarity   100.0%;  Pred. No. 15;
  Matches   22;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        965 CCAGAGAGAGTCAACCCCTTCT 986
              ||||||||||||||||||||||
Db          1 CCAGAGAGAGTCAACCCCTTCT 22


RESULT 7
ABT04613/c
ID   ABT04613 standard; DNA; 21 BP.
XX
AC   ABT04613;
XX
DT   25-SEP-2002  (first entry)
XX
DE   Human CES1 gene probe SEQ ID NO: 79.
XX
KW   Human; drug metabolism; enzyme; probe; ss.
XX
OS   Homo sapiens.
XX
PN   JP2002142780-A.
XX
PD   21-MAY-2002.
XX
PF   28-AUG-2001; 2001JP-00257338.
XX
PR   04-SEP-2000; 2000JP-00267163.
XX
PA   (SAKA ) OTSUKA SEIYAKU KOGYO KK.
XX
DR   WPI; 2002-552472/59.
XX
PT   Measurement of an enzyme participating to the first phase reaction of
PT   drug metabolism, a probe and a kit for it.
XX
PS   Claim 8; Page 26; 36pp; Japanese.
XX
CC   The present invention relates to probes which can be used for the
CC   measurement of an enzyme. The probes can be used for the measurement of
CC   an enzyme participating to the first phase reaction of drug metabolism.
CC   The present sequence is a probe shown in the invention
XX
SQ   Sequence 21 BP; 3 A; 7 C; 3 G; 8 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 21;  DB 1;  Length 21;
  Best Local Similarity   100.0%;  Pred. No. 17;
  Matches   21;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1071 GGTCGGAATTAACAAGCAGGA 1091
              |||||||||||||||||||||
Db         21 GGTCGGAATTAACAAGCAGGA 1


RESULT 8
ABZ74913/c
ID   ABZ74913 standard; DNA; 20 BP.
XX
AC   ABZ74913;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #33.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base    1. .20
FT                    /*tag=  a
FT                    /mod_base= OTHER
FT                    /note= "Phosphorothioate linkages"
FT   modified_base    1. .5
FT                    /*tag=  b
FT                    /mod_base= OTHER
FT                    /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                    cytosines are 5-methylcytosine"
FT   modified_base    16. .20
FT                    /*tag=  c
FT                    /mod_base= OTHER
FT                    /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                    cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
```

```
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 8 C; 3 G; 6 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1421 TGATAGGAGACCACGGGGAT 1440
              ||||||||||||||||||||
Db         20 TGATAGGAGACCACGGGGAT 1


RESULT 9
ABZ74902/c
ID   ABZ74902 standard; DNA; 20 BP.
XX
AC   ABZ74902;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #22.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 5 C; 5 G; 4 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        551 TCTGGGGATTCTTCAGCACA 570
              ||||||||||||||||||||
Db         20 TCTGGGGATTCTTCAGCACA 1


RESULT 10
ABZ74916/c
ID   ABZ74916 standard; DNA; 20 BP.
XX
AC   ABZ74916;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #36.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
```

```
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 2 A; 4 C; 5 G; 9 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1711 CAGACAGAACACATAGAGCT 1730
              ||||||||||||||||||||
Db         20 CAGACAGAACACATAGAGCT 1


RESULT 11
ABZ74907/c
ID   ABZ74907 standard; DNA; 20 BP.
XX
AC   ABZ74907;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #27.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 2 A; 6 C; 6 G; 6 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        881 ACTGCCTGCGACAGAAGACG 900
              ||||||||||||||||||||
Db         20 ACTGCCTGCGACAGAAGACG 1


RESULT 12
ABZ74911/c
ID   ABZ74911 standard; DNA; 20 BP.
XX
AC   ABZ74911;
XX
DT   10-MAY-2003  (first entry)
```

```
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #31.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag= a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag= b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 6 C; 2 G; 9 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1231 GAGAAATACTTAGGAGGAAC 1250
              ||||||||||||||||||||
Db         20 GAGAAATACTTAGGAGGAAC 1


RESULT 13
ABZ74912/c
ID   ABZ74912 standard; DNA; 20 BP.
XX
AC   ABZ74912;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #32.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag= a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag= b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
```

```
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 8 A; 6 C; 4 G; 2 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1311 TGTCCCATCTGTGATTGTGG 1330
              ||||||||||||||||||||
Db         20 TGTCCCATCTGTGATTGTGG 1


RESULT 14
ABZ74897/c
ID   ABZ74897 standard; DNA; 20 BP.
XX
AC   ABZ74897;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #17.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 90; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 6 C; 6 G; 2 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         14 TGTCGCCCTTCACGATGTGG 33
              ||||||||||||||||||||
Db         20 TGTCGCCCTTCACGATGTGG 1


RESULT 15
ABZ74901/c
ID   ABZ74901 standard; DNA; 20 BP.
XX
AC   ABZ74901;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #21.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
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FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 5 A; 8 C; 4 G; 3 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        431 CGGTGATGGTGTGGATCCAC 450
              ||||||||||||||||||||
Db         20 CGGTGATGGTGTGGATCCAC 1


RESULT 16
ABZ74899/c
ID   ABZ74899 standard; DNA; 20 BP.
XX
AC   ABZ74899;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #19.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag= a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag= b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 4 A; 9 C; 2 G; 5 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy        121 GGCAAAGTGCTGGGGAAGTT 140
              ||||||||||||||||||||
Db         20 GGCAAAGTGCTGGGGAAGTT 1


RESULT 17
ABZ74900/c
ID   ABZ74900 standard; DNA; 20 BP.
XX
AC   ABZ74900;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #20.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 4 C; 7 G; 6 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        261 GAAGAATGCCACCTCGTACC 280
              ||||||||||||||||||||
Db         20 GAAGAATGCCACCTCGTACC 1


RESULT 18
ABZ74909/c
ID   ABZ74909 standard; DNA; 20 BP.
XX
AC   ABZ74909;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #29.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
```

```
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 7 C; 3 G; 7 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1071 GGTCGGAATTAACAAGCAGG 1090
              ||||||||||||||||||||
Db         20 GGTCGGAATTAACAAGCAGG 1


RESULT 19
ABZ74898/c
ID   ABZ74898 standard; DNA; 20 BP.
XX
AC   ABZ74898;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #18.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 90; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 8 C; 6 G; 0 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         61 TCTGCTTCCGCGGCTTGGGG 80
              ||||||||||||||||||||
Db         20 TCTGCTTCCGCGGCTTGGGG 1


RESULT 20
ABZ74904/c
ID   ABZ74904 standard; DNA; 20 BP.
XX
AC   ABZ74904;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #24.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
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OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag= a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag= b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 4 A; 9 C; 3 G; 4 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        681 CTTTGGAGAGTCAGCGGGAG 700
              ||||||||||||||||||||
Db         20 CTTTGGAGAGTCAGCGGGAG 1
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RESULT 21
ABZ74908/c
ID   ABZ74908 standard; DNA; 20 BP.
XX
AC   ABZ74908;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #28.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag= a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag= b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag= c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
```

```
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 7 A; 6 C; 5 G; 2 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        981 CCTTCTGGGCACTGTGATTG 1000
              ||||||||||||||||||||
Db         20 CCTTCTGGGCACTGTGATTG 1


RESULT 22
ABZ74910/c
ID   ABZ74910 standard; DNA; 20 BP.
XX
AC   ABZ74910;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #30.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 4 C; 7 G; 3 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1171 CTCCTGTGGAAGTCCTATCC 1190
              ||||||||||||||||||||
Db         20 CTCCTGTGGAAGTCCTATCC 1


RESULT 23
ABZ74884
ID   ABZ74884 standard; DNA; 20 BP.
XX
AC   ABZ74884;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 PCR primer #4.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; antisense therapy;
KW   quantitative real-time PCR; primer; ss.
XX
OS   Homo sapiens.
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 13; Page 87; 117pp; English.
```

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XX
CC   Sequences ABZ74884-ABZ74885 represent human acyl coenzyme A cholesterol
CC   acyltransferase-1 PCR primers used in quantitative real-time PCR with
CC   probe ABZ74886 in an exemplification of the present invention. The
CC   invention relates to antisense oligonucleotides targeted to the human or
CC   mouse acyl coenzyme A cholesterol acyltransferase-1 gene, which inhibit
CC   its expression. A series of oligonucleotides (ABZ74897-ABZ74942) were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on mRNA levels by quantitative real-time PCR. GAPDH (glyceraldehyde-3-
CC   phosphate) mRNA levels were measured as a control. Acyl coenzyme A
CC   cholesterol acyltransferase (ACAT) enzymes catalyse the synthesis of
CC   cholesterol esters from free cholesterol and fatty acyl-CoA, and are also
CC   involved in regulating the concentration of cellular free sterols. The
CC   human acyl coenzyme A cholesterol acyltransferase-1 is the predominant
CC   ACAT isoform in the liver, and the gene encoding it is located on
CC   chromosome 1q25, although a subsequent study has indicated that one acyl
CC   coenzyme A cholesterol acyltransferase-1 mRNA is produced from genes on
CC   two different chromosomes (chromosomes 1 and 7) by a novel RNA
CC   recombination mechanism involving trans-splicing of the two discontinuous
CC   precursor mRNAs. The oligonucleotides of the invention are useful for the
CC   prevention and treatment of conditions associated with acyl coenzyme A
CC   cholesterol acyltransferase-1, such as disorders involving abnormal lipid
CC   or cholesterol metabolism, e.g., atherosclerosis or cardiovascular
CC   disease. They are also useful in research and diagnostics for modulating
CC   the expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 5 A; 2 C; 7 G; 6 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1513 ATGGTGATGAAATTCTGGGC 1532
              ||||||||||||||||||||
Db          1 ATGGTGATGAAATTCTGGGC 20


RESULT 24
ABZ74885/c
ID   ABZ74885 standard; DNA; 20 BP.
XX
AC   ABZ74885;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 PCR primer #5.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; antisense therapy;
KW   quantitative real-time PCR; primer; ss.
XX
OS   Homo sapiens.
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 13; Page 87; 117pp; English.
XX
CC   Sequences ABZ74884-ABZ74885 represent human acyl coenzyme A cholesterol
CC   acyltransferase-1 PCR primers used in quantitative real-time PCR with
CC   probe ABZ74886 in an exemplification of the present invention. The
CC   invention relates to antisense oligonucleotides targeted to the human or
CC   mouse acyl coenzyme A cholesterol acyltransferase-1 gene, which inhibit
CC   its expression. A series of oligonucleotides (ABZ74897-ABZ74942) were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on mRNA levels by quantitative real-time PCR. GAPDH (glyceraldehyde-3-
CC   phosphate) mRNA levels were measured as a control. Acyl coenzyme A
CC   cholesterol acyltransferase (ACAT) enzymes catalyse the synthesis of
CC   cholesterol esters from free cholesterol and fatty acyl-CoA, and are also
CC   involved in regulating the concentration of cellular free sterols. The
CC   human acyl coenzyme A cholesterol acyltransferase-1 is the predominant
CC   ACAT isoform in the liver, and the gene encoding it is located on
CC   chromosome 1q25, although a subsequent study has indicated that one acyl
CC   coenzyme A cholesterol acyltransferase-1 mRNA is produced from genes on
CC   two different chromosomes (chromosomes 1 and 7) by a novel RNA
CC   recombination mechanism involving trans-splicing of the two discontinuous
CC   precursor mRNAs. The oligonucleotides of the invention are useful for the
CC   prevention and treatment of conditions associated with acyl coenzyme A
CC   cholesterol acyltransferase-1, such as disorders involving abnormal lipid
CC   or cholesterol metabolism, e.g., atherosclerosis or cardiovascular
CC   disease. They are also useful in research and diagnostics for modulating
CC   the expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 1 A; 8 C; 3 G; 8 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1685 CCAAGAAGGCAGTGGAGAAG 1704
              ||||||||||||||||||||
Db         20 CCAAGAAGGCAGTGGAGAAG 1


RESULT 25
ABZ74906/c
ID   ABZ74906 standard; DNA; 20 BP.
XX
AC   ABZ74906;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #26.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
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FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 7 A; 5 C; 4 G; 4 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        831 AATTGCTATCACTGCTGGGT 850
              ||||||||||||||||||||
Db         20 AATTGCTATCACTGCTGGGT 1


RESULT 26
ABZ74914/c
ID   ABZ74914 standard; DNA; 20 BP.
XX
AC   ABZ74914;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #34.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 8 C; 1 G; 5 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1512 GATGGTGATGAAATTCTGGG 1531
              ||||||||||||||||||||
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Db         20 GATGGTGATGAAATTCTGGG 1


RESULT 27
ABZ74915/c
ID   ABZ74915 standard; DNA; 20 BP.
XX
AC   ABZ74915;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #35.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 4 A; 5 C; 6 G; 5 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1610 TGCAGATTGGTGCCAACACC 1629
              ||||||||||||||||||||
Db         20 TGCAGATTGGTGCCAACACC 1


RESULT 28
ABZ74905/c
ID   ABZ74905 standard; DNA; 20 BP.
XX
AC   ABZ74905;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #25.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
```

```
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 4 C; 9 G; 4 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        741 GAACCTCTTCCACCGGGCCA 760
              ||||||||||||||||||||
Db         20 GAACCTCTTCCACCGGGCCA 1


RESULT 29
ABZ74929/c
ID   ABZ74929 standard; DNA; 20 BP.
XX
AC   ABZ74929;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Mouse acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #49.
XX
KW   Mouse; murine; acyl coenzyme A cholesterol acyltransferase-1; ACAT;
KW   chromosome 1; cholesterol metabolism; free sterol regulation;
KW   cholesterol metabolism disorder; lipid metabolism disorder;
KW   atherosclerosis; cardiovascular disease; cardiant; expression inhibition;
KW   phosphorothioate; antisense oligonucleotide; ss.
XX
OS   Mus musculus.
XX
FH   Key             Location/Qualifiers
FT   modified_base    1. .20
FT                    /*tag=  a
FT                    /mod_base= OTHER
FT                    /note= "Phosphorothioate linkages"
FT   modified_base    1. .5
FT                    /*tag=  b
FT                    /mod_base= OTHER
FT                    /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                    cytosines are 5-methylcytosine"
FT   modified_base    16. .20
FT                    /*tag=  c
FT                    /mod_base= OTHER
FT                    /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                    cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 92; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The murine acyl coenzyme A
CC   cholesterol acyltransferase-1 gene is located on chromosome 1. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 6 A; 5 C; 5 G; 4 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        550 ATCTGGGGATTCTTCAGCAC 569
              ||||||||||||||||||||
Db         20 ATCTGGGGATTCTTCAGCAC 1


RESULT 30
ABZ74903/c
ID   ABZ74903 standard; DNA; 20 BP.
XX
AC   ABZ74903;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #23.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base    1. .20
FT                    /*tag=  a
FT                    /mod_base= OTHER
FT                    /note= "Phosphorothioate linkages"
FT   modified_base    1. .5
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FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Example 15; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 3 A; 7 C; 7 G; 3 T; 0 U; 0 Other;

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        621 CCTGCGCTGGGTCCAGGACA 640
              ||||||||||||||||||||
Db         20 CCTGCGCTGGGTCCAGGACA 1


RESULT 31
ABZ74917/c
ID   ABZ74917 standard; DNA; 20 BP.
XX
AC   ABZ74917;
XX
DT   10-MAY-2003  (first entry)
XX
DE   Human acyl coenzyme A cholesterol acyltransferase-1 antisense oligo #37.
XX
KW   Human; acyl coenzyme A cholesterol acyltransferase-1; ACAT; liver;
KW   chromosome 1q25; chromosome 1; chromosome 7; cholesterol metabolism;
KW   free sterol regulation; cholesterol metabolism disorder;
KW   lipid metabolism disorder; atherosclerosis; cardiovascular disease;
KW   cardiant; expression inhibition; phosphorothioate;
KW   antisense oligonucleotide; ss.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   modified_base   1. .20
FT                   /*tag=  a
FT                   /mod_base= OTHER
FT                   /note= "Phosphorothioate linkages"
FT   modified_base   1. .5
FT                   /*tag=  b
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
FT   modified_base   16. .20
FT                   /*tag=  c
FT                   /mod_base= OTHER
FT                   /note= "2'-methoxyethyl (2'-MOE) nucleotides. All 2' MOE
FT                   cytosines are 5-methylcytosine"
XX
PN   WO2003012144-A1.
XX
PD   13-FEB-2003.
XX
PF   17-JUL-2002; 2002WO-US022696.
XX
PR   01-AUG-2001; 2001US-00920394.
XX
PA   (ISIS-) ISIS PHARM INC.
XX
PI   Crooke RM,  Graham MJ,  Lemonidis KM;
XX
DR   WPI; 2003-239532/23.
XX
PT   New antisense oligonucleotides targeted to a nucleic acid encoding acyl
PT   coenzyme A cholesterol acyltransferase-1, useful for treating a
PT   disease/condition involving abnormal lipid or cholesterol metabolism,
PT   e.g. atherosclerosis.
XX
PS   Claim 3; Page 91; 117pp; English.
XX
CC   Sequences ABZ74897-ABZ74942 represent antisense oligonucleotides targeted
CC   to the human or murine acyl coenzyme A cholesterol acyltransferase-1
CC   gene, which inhibit its expression. The antisense oligonucleotides were
CC   designed to target different regions of the human or murine acyl coenzyme
CC   A cholesterol acyltransferase-1 RNA, and were analysed for their effect
CC   on acyl coenzyme A cholesterol acyltransferase-1 mRNA levels by
CC   quantitative real-time PCR. Acyl coenzyme A cholesterol acyltransferase
CC   (ACAT) enzymes catalyse the synthesis of cholesterol esters from free
CC   cholesterol and fatty acyl-CoA, and are also involved in regulating the
CC   concentration of cellular free sterols. The human acyl coenzyme A
CC   cholesterol acyltransferase-1 is the predominant ACAT isoform in the
CC   liver, and the gene encoding it is located on chromosome 1q25, although a
CC   subsequent study has indicated that one acyl coenzyme A cholesterol
CC   acyltransferase-1 mRNA is produced from genes on two different
CC   chromosomes (chromosomes 1 and 7) by a novel RNA recombination mechanism
CC   involving trans-splicing of the two discontinuous precursor mRNAs. The
CC   oligonucleotides of the invention are useful for the prevention and
CC   treatment of conditions associated with acyl coenzyme A cholesterol
CC   acyltransferase-1, such as disorders involving abnormal lipid or
CC   cholesterol metabolism, e.g., atherosclerosis or cardiovascular disease.
CC   They are also useful in research and diagnostics for modulating the
CC   expression of acyl coenzyme A cholesterol acyltransferase-1
XX
SQ   Sequence 20 BP; 4 A; 6 C; 2 G; 8 T; 0 U; 0 Other;
```

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  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1721 ACATAGAGCTGTGAATGAAG 1740
             ||||||||||||||||||||
Db         20 ACATAGAGCTGTGAATGAAG 1


RESULT 32
ABZ69754/c
ID   ABZ69754 standard; DNA; 19 BP.
XX
AC   ABZ69754;
XX
DT   04-APR-2003  (first entry)
XX
DE   Human CEH antisense PCR primer.
XX
KW   Human; ABC-A1; expression promoter; pioglitazone; LXRalpha; ABC-G1;
KW   ACAT-1; CEH; cardiant; antianginal; antiarteriosclerotic; anorectic;
KW   cerebroprotective; hepatotropic; antidiabetic; dermatological;
KW   cytostatic; nephrotropic; vasotropic; antiinflammatory; antilipemic;
KW   anticoagulant; haemolytic; protozoacide; cholesterol; PCR; primer; ss.
XX
OS   Homo sapiens.
XX
PN   WO200287580-A1.
XX
PD   07-NOV-2002.
XX
PF   24-APR-2002; 2002WO-JP004072.
XX
PR   25-APR-2001; 2001JP-00128222.
XX
PA   (TAKE ) TAKEDA CHEM IND LTD.
XX
PI   Sugiyama Y,  Fuse H,  Hirakata M,  Tozawa R;
XX
DR   WPI; 2003-148283/14.
XX
PT   ABC-A1 mRNA expression promoter comprises pioglitazone e.g. for
PT   controlling cholesterol distribution.
XX
PS   Example 4; Page 84; 117pp; Japanese.
XX
CC   The invention relates to a novel ABC-A1 mRNA expression promoter
CC   comprising pioglitazone. Also included are ABC-A1 mRNA, LXRalpha mRNA,
CC   ABC-G1 mRNA, ACAT-1 mRNA and CEH mRNA expression promoters. The novel
CC   promoters of the invention have cardiant, antianginal,
CC   antiarteriosclerotic, cerebroprotective, hepatotropic, antidiabetic,
CC   dermatological, cytostatic, anorectic, nephrotropic, vasotropic,
CC   antiinflammatory, antilipemic, anticoagulant, haemolytic, and
CC   protozoacide activity. The promoters are useful for controlling
CC   cholesterol distribution in vivo and for treating and preventing e.g.
CC   diseases associated with low blood high density lipoprotein, Tangier
CC   disease, coronary vascular disorders (such as myocardial infarction and
CC   angina pectoris), arteriosclerosis, cerebral vascular disorders (such as
CC   cerebral infarction), fatty liver, liver sclerosis, diabetic
CC   complications, dermatological disorders, leukaemia, joint disease,
CC   peripheral vascular disorders, obesity, cerebrotendinous xanthomatosis,
CC   glomerular nephritis, restenosis (e.g. after bypass surgery),
CC   pancreatitis, hyperlipidaemia, deep vein thrombosis and cerebral malaria.
CC   The present sequence represents a PCR primer used in the invention to
CC   amplify the human CEH cDNA
XX
SQ   Sequence 19 BP; 5 A; 5 C; 6 G; 3 T; 0 U; 0 Other;

  Query Match             1.1%;  Score 19;  DB 1;  Length 19;
  Best Local Similarity   100.0%;  Pred. No. 20;
  Matches   19;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        874 ATGGTTCACTGCCTGCGAC 892
              |||||||||||||||||||
Db         19 ATGGTTCACTGCCTGCGAC 1


RESULT 33
ABZ69753
ID   ABZ69753 standard; DNA; 18 BP.
XX
AC   ABZ69753;
XX
DT   04-APR-2003  (first entry)
XX
DE   Human CEH sense PCR primer.
XX
KW   Human; ABC-A1; expression promoter; pioglitazone; LXRalpha; ABC-G1;
KW   ACAT-1; CEH; cardiant; antianginal; antiarteriosclerotic; anorectic;
KW   cerebroprotective; hepatotropic; antidiabetic; dermatological;
KW   cytostatic; nephrotropic; vasotropic; antiinflammatory; antilipemic;
KW   anticoagulant; haemolytic; protozoacide; cholesterol; PCR; primer; ss.
XX
OS   Homo sapiens.
XX
PN   WO200287580-A1.
XX
PD   07-NOV-2002.
XX
PF   24-APR-2002; 2002WO-JP004072.
XX
PR   25-APR-2001; 2001JP-00128222.
XX
PA   (TAKE ) TAKEDA CHEM IND LTD.
XX
PI   Sugiyama Y,  Fuse H,  Hirakata M,  Tozawa R;
XX
DR   WPI; 2003-148283/14.
XX
PT   ABC-A1 mRNA expression promoter comprises pioglitazone e.g. for
PT   controlling cholesterol distribution.
XX
PS   Example 4; Page 84; 117pp; Japanese.
XX
CC   The invention relates to a novel ABC-A1 mRNA expression promoter
CC   comprising pioglitazone. Also included are ABC-A1 mRNA, LXRalpha mRNA,
CC   ABC-G1 mRNA, ACAT-1 mRNA and CEH mRNA expression promoters. The novel
CC   promoters of the invention have cardiant, antianginal,
CC   antiarteriosclerotic, cerebroprotective, hepatotropic, antidiabetic,
CC   dermatological, cytostatic, anorectic, nephrotropic, vasotropic,
CC   antiinflammatory, antilipemic, anticoagulant, haemolytic, and
CC   protozoacide activity. The promoters are useful for controlling
CC   cholesterol distribution in vivo and for treating and preventing e.g.
CC   diseases associated with low blood high density lipoprotein, Tangier
CC   disease, coronary vascular disorders (such as myocardial infarction and
CC   angina pectoris), arteriosclerosis, cerebral vascular disorders (such as
CC   cerebral infarction), fatty liver, liver sclerosis, diabetic
CC   complications, dermatological disorders, leukaemia, joint disease,
CC   peripheral vascular disorders, obesity, cerebrotendinous xanthomatosis,
CC   glomerular nephritis, restenosis (e.g. after bypass surgery),
CC   pancreatitis, hyperlipidaemia, deep vein thrombosis and cerebral malaria.
CC   The present sequence represents a PCR primer used in the invention to
CC   amplify the human CEH cDNA
XX
SQ   Sequence 18 BP; 5 A; 5 C; 5 G; 3 T; 0 U; 0 Other;

  Query Match             1.0%;  Score 18;  DB 1;  Length 18;
  Best Local Similarity   100.0%;  Pred. No. 21;
  Matches   18;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        815 AGCCCTTGGCTGAGCAAA 832
              ||||||||||||||||||
Db          1 AGCCCTTGGCTGAGCAAA 18


Search completed: December  8, 2004, 07:22:59
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Job time : 1 secs

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: December 8, 2004, 07:25:43 ; Search time 1 Seconds
(without alignments)
2.049 Million cell updates/sec

Title: US-09-920-394-3
Perfect score: 1728
Sequence: 1 tgtcgcccttcacgatgtgg.....catagagctgtgaatgaaga 1728

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 0.5

Searched: 28 seqs, 593 residues

Total number of hits satisfying chosen parameters: 56

Minimum DB seq length: 8
Maximum DB seq length: 50

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 28 summaries

Database : rnpb3.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Result No.	Score	% Query Match	Length	DB	ID	Description
	1	50	2.9	50	1	US-09-920-394-6	Sequence 6, Appli
	2	26	1.5	26	1	US-10-468-433-24	Sequence 24, Appl
	3	20	1.2	20	1	US-09-920-394-4	Sequence 4, Appli
c	4	20	1.2	20	1	US-09-920-394-5	Sequence 5, Appli
c	5	20	1.2	20	1	US-09-920-394-17	Sequence 17, Appl
c	6	20	1.2	20	1	US-09-920-394-18	Sequence 18, Appl
c	7	20	1.2	20	1	US-09-920-394-19	Sequence 19, Appl
c	8	20	1.2	20	1	US-09-920-394-20	Sequence 20, Appl
c	9	20	1.2	20	1	US-09-920-394-21	Sequence 21, Appl
c	10	20	1.2	20	1	US-09-920-394-22	Sequence 22, Appl
c	11	20	1.2	20	1	US-09-920-394-23	Sequence 23, Appl
c	12	20	1.2	20	1	US-09-920-394-24	Sequence 24, Appl
c	13	20	1.2	20	1	US-09-920-394-25	Sequence 25, Appl
c	14	20	1.2	20	1	US-09-920-394-26	Sequence 26, Appl
c	15	20	1.2	20	1	US-09-920-394-27	Sequence 27, Appl
c	16	20	1.2	20	1	US-09-920-394-28	Sequence 28, Appl
c	17	20	1.2	20	1	US-09-920-394-29	Sequence 29, Appl
c	18	20	1.2	20	1	US-09-920-394-30	Sequence 30, Appl
c	19	20	1.2	20	1	US-09-920-394-31	Sequence 31, Appl
c	20	20	1.2	20	1	US-09-920-394-32	Sequence 32, Appl
c	21	20	1.2	20	1	US-09-920-394-33	Sequence 33, Appl
c	22	20	1.2	20	1	US-09-920-394-34	Sequence 34, Appl
c	23	20	1.2	20	1	US-09-920-394-35	Sequence 35, Appl
c	24	20	1.2	20	1	US-09-920-394-36	Sequence 36, Appl
c	25	20	1.2	20	1	US-09-920-394-37	Sequence 37, Appl
c	26	20	1.2	20	1	US-09-920-394-49	Sequence 49, Appl
c	27	19	1.1	19	1	US-10-468-433-23	Sequence 23, Appl
	28	18	1.0	18	1	US-10-468-433-22	Sequence 22, Appl

ALIGNMENTS

RESULT 1
US-09-920-394-6
; Sequence 6, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 6
; LENGTH: 50
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: PCR Probe
US-09-920-394-6

Query Match 2.9%; Score 50; DB 1; Length 50;
Best Local Similarity 100.0%; Pred. No. 0.022;
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1601 AAGGGTATCTGCAGATTGGTGCCAACACCCAGGCGGCCCAGAAGCTGAAG 1650
             ||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 AAGGGTATCTGCAGATTGGTGCCAACACCCAGGCGGCCCAGAAGCTGAAG 50
```

RESULT 2
US-10-468-433-24
; Sequence 24, Application US/10468433
; Publication No. US20040077689A1
; GENERAL INFORMATION:
; APPLICANT: SUGIYAMA, Yasuo
; APPLICANT: FUSE, Hiromitsu
; APPLICANT: HIRAKATA, Masao
; APPLICANT: TOZAWA, Ryuichi
; TITLE OF INVENTION: ABC Expression Promoting Agent
; FILE REFERENCE: 2907US0P
; CURRENT APPLICATION NUMBER: US/10/468,433
; CURRENT FILING DATE: 2003-10-16
; PRIOR APPLICATION NUMBER: PCT/JP02/04072
; PRIOR FILING DATE: 2002-04-24
; PRIOR APPLICATION NUMBER: JP 2001-128222
; PRIOR FILING DATE: 2001-04-25
; NUMBER OF SEQ ID NOS: 24
; SEQ ID NO 24
; LENGTH: 26
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: primer
US-10-468-433-24

Query Match 1.5%; Score 26; DB 1; Length 26;
Best Local Similarity 100.0%; Pred. No. 3.2;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy        834 TGCTATCACTGCTGGGTGCAAAACCA 859
              ||||||||||||||||||||||||||
Db          1 TGCTATCACTGCTGGGTGCAAAACCA 26
```

RESULT 3
US-09-920-394-4
; Sequence 4, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham

```
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 4
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: PCR Primer
US-09-920-394-4

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1513 ATGGTGATGAAATTCTGGGC 1532
             ||||||||||||||||||||
Db          1 ATGGTGATGAAATTCTGGGC 20


RESULT 4
US-09-920-394-5/c
; Sequence 5, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 5
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: PCR Primer
US-09-920-394-5

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1685 CCAAGAAGGCAGTGGAGAAG 1704
             ||||||||||||||||||||
Db         20 CCAAGAAGGCAGTGGAGAAG 1


RESULT 5
US-09-920-394-17/c
; Sequence 17, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 17
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-17

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         14 TGTCGCCCTTCACGATGTGG 33
              ||||||||||||||||||||
Db         20 TGTCGCCCTTCACGATGTGG 1


RESULT 6
US-09-920-394-18/c
; Sequence 18, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 18
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-18

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         61 TCTGCTTCCGCGGCTTGGGG 80
              ||||||||||||||||||||
Db         20 TCTGCTTCCGCGGCTTGGGG 1


RESULT 7
US-09-920-394-19/c
; Sequence 19, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 19
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-19

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        121 GGCAAAGTGCTGGGGAAGTT 140
              ||||||||||||||||||||
Db         20 GGCAAAGTGCTGGGGAAGTT 1
```

```
RESULT 8
US-09-920-394-20/c
; Sequence 20, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 20
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-20

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        261 GAAGAATGCCACCTCGTACC 280
              ||||||||||||||||||||
Db         20 GAAGAATGCCACCTCGTACC 1


RESULT 9
US-09-920-394-21/c
; Sequence 21, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 21
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-21

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        431 CGGTGATGGTGTGGATCCAC 450
              ||||||||||||||||||||
Db         20 CGGTGATGGTGTGGATCCAC 1


RESULT 10
US-09-920-394-22/c
; Sequence 22, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 22
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-22

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        551 TCTGGGGATTCTTCAGCACA 570
              ||||||||||||||||||||
Db         20 TCTGGGGATTCTTCAGCACA 1


RESULT 11
US-09-920-394-23/c
; Sequence 23, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 23
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-23

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        621 CCTGCGCTGGGTCCAGGACA 640
              ||||||||||||||||||||
Db         20 CCTGCGCTGGGTCCAGGACA 1


RESULT 12
US-09-920-394-24/c
; Sequence 24, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 24
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
```

US-09-920-394-24

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 681 CTTTGGAGAGTCAGCGGGAG 700
||||||||||||||||||||
Db 20 CTTTGGAGAGTCAGCGGGAG 1

RESULT 13
US-09-920-394-25/c
; Sequence 25, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 25
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-25

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 741 GAACCTCTTCCACCGGGCCA 760
||||||||||||||||||||
Db 20 GAACCTCTTCCACCGGGCCA 1

RESULT 14
US-09-920-394-26/c
; Sequence 26, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 26
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-26

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 831 AATTGCTATCACTGCTGGGT 850
||||||||||||||||||||
Db 20 AATTGCTATCACTGCTGGGT 1

RESULT 15
US-09-920-394-27/c
; Sequence 27, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 27
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-27

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 881 ACTGCCTGCGACAGAAGACG 900
||||||||||||||||||||
Db 20 ACTGCCTGCGACAGAAGACG 1

RESULT 16
US-09-920-394-28/c
; Sequence 28, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 28
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-28

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 981 CCTTCTGGGCACTGTGATTG 1000
||||||||||||||||||||
Db 20 CCTTCTGGGCACTGTGATTG 1

RESULT 17
US-09-920-394-29/c
; Sequence 29, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589

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;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 29
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-29

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1071 GGTCGGAATTAACAAGCAGG 1090
              ||||||||||||||||||||
Db         20 GGTCGGAATTAACAAGCAGG 1


RESULT 18
US-09-920-394-30/c
; Sequence 30, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 30
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-30

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1171 CTCCTGTGGAAGTCCTATCC 1190
              ||||||||||||||||||||
Db         20 CTCCTGTGGAAGTCCTATCC 1


RESULT 19
US-09-920-394-31/c
; Sequence 31, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 31
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-31

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1231 GAGAAATACTTAGGAGGAAC 1250
              ||||||||||||||||||||
Db         20 GAGAAATACTTAGGAGGAAC 1


RESULT 20
US-09-920-394-32/c
; Sequence 32, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 32
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-32

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1311 TGTCCCATCTGTGATTGTGG 1330
              ||||||||||||||||||||
Db         20 TGTCCCATCTGTGATTGTGG 1


RESULT 21
US-09-920-394-33/c
; Sequence 33, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
;  APPLICANT: Rosanne M. Crooke
;  APPLICANT:  Mark J. Graham
;  APPLICANT:  Kristina M. Lemonidis
;  TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
;  TITLE OF INVENTION:  EXPRESSION
;  FILE REFERENCE: ISPH-0589
;  CURRENT APPLICATION NUMBER: US/09/920,394
;  CURRENT FILING DATE:  2001-08-01
;  NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 33
;   LENGTH: 20
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-33

  Query Match             1.2%;  Score 20;  DB 1;  Length 20;
  Best Local Similarity   100.0%;  Pred. No. 12;
  Matches   20;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1421 TGATAGGAGACCACGGGGAT 1440
              ||||||||||||||||||||
Db         20 TGATAGGAGACCACGGGGAT 1


RESULT 22
US-09-920-394-34/c
```

; Sequence 34, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 34
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-34

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1512 GATGGTGATGAAATTCTGGG 1531
||||||||||||||||||||
Db 20 GATGGTGATGAAATTCTGGG 1

RESULT 23
US-09-920-394-35/c
; Sequence 35, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 35
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-35

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1610 TGCAGATTGGTGCCAACACC 1629
||||||||||||||||||||
Db 20 TGCAGATTGGTGCCAACACC 1

RESULT 24
US-09-920-394-36/c
; Sequence 36, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERA
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 36
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-36

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1711 CAGACAGAACACATAGAGCT 1730
||||||||||||||||||||
Db 20 CAGACAGAACACATAGAGCT 1

RESULT 25
US-09-920-394-37/c
; Sequence 37, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 37
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-37

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1721 ACATAGAGCTGTGAATGAAG 1740
||||||||||||||||||||
Db 20 ACATAGAGCTGTGAATGAAG 1

RESULT 26
US-09-920-394-49/c
; Sequence 49, Application US/09920394
; Publication No. US20030096773A1
; GENERAL INFORMATION:
; APPLICANT: Rosanne M. Crooke
; APPLICANT: Mark J. Graham
; APPLICANT: Kristina M. Lemonidis
; TITLE OF INVENTION: ANTISENSE MODULATION OF ACYL COENZYME A CHOLESTEROL ACYLTRANSFERAS
; TITLE OF INVENTION: EXPRESSION
; FILE REFERENCE: ISPH-0589
; CURRENT APPLICATION NUMBER: US/09/920,394
; CURRENT FILING DATE: 2001-08-01
; NUMBER OF SEQ ID NOS: 62
; SEQ ID NO 49
; LENGTH: 20
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Antisense Oligonucleotide
US-09-920-394-49

Query Match 1.2%; Score 20; DB 1; Length 20;
Best Local Similarity 100.0%; Pred. No. 12;

Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy        550 ATCTGGGGATTCTTCAGCAC 569
              ||||||||||||||||||||
Db         20 ATCTGGGGATTCTTCAGCAC 1
```

RESULT 27
US-10-468-433-23/c
; Sequence 23, Application US/10468433
; Publication No. US20040077689A1
; GENERAL INFORMATION:
; APPLICANT: SUGIYAMA, Yasuo
; APPLICANT: FUSE, Hiromitsu
; APPLICANT: HIRAKATA, Masao
; APPLICANT: TOZAWA, Ryuichi
; TITLE OF INVENTION: ABC Expression Promoting Agent
; FILE REFERENCE: 2907US0P
; CURRENT APPLICATION NUMBER: US/10/468,433
; CURRENT FILING DATE: 2003-10-16
; PRIOR APPLICATION NUMBER: PCT/JP02/04072
; PRIOR FILING DATE: 2002-04-24
; PRIOR APPLICATION NUMBER: JP 2001-128222
; PRIOR FILING DATE: 2001-04-25
; NUMBER OF SEQ ID NOS: 24
; SEQ ID NO 23
; LENGTH: 19
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: primer
US-10-468-433-23

Query Match 1.1%; Score 19; DB 1; Length 19;
Best Local Similarity 100.0%; Pred. No. 14;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy        874 ATGGTTCACTGCCTGCGAC 892
              |||||||||||||||||||
Db         19 ATGGTTCACTGCCTGCGAC 1
```

RESULT 28
US-10-468-433-22
; Sequence 22, Application US/10468433
; Publication No. US20040077689A1
; GENERAL INFORMATION:
; APPLICANT: SUGIYAMA, Yasuo
; APPLICANT: FUSE, Hiromitsu
; APPLICANT: HIRAKATA, Masao
; APPLICANT: TOZAWA, Ryuichi
; TITLE OF INVENTION: ABC Expression Promoting Agent
; FILE REFERENCE: 2907US0P
; CURRENT APPLICATION NUMBER: US/10/468,433
; CURRENT FILING DATE: 2003-10-16
; PRIOR APPLICATION NUMBER: PCT/JP02/04072
; PRIOR FILING DATE: 2002-04-24
; PRIOR APPLICATION NUMBER: JP 2001-128222
; PRIOR FILING DATE: 2001-04-25
; NUMBER OF SEQ ID NOS: 24
; SEQ ID NO 22
; LENGTH: 18
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: primer
US-10-468-433-22

Query Match 1.0%; Score 18; DB 1; Length 18;
Best Local Similarity 100.0%; Pred. No. 18;
Matches 18; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy        815 AGCCCTTGGCTGAGCAAA 832
              ||||||||||||||||||
Db         1 AGCCCTTGGCTGAGCAAA 18
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Search completed: December 8, 2004, 07:25:44
Job time : 1 secs

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: December 8, 2004, 07:24:14 ; Search time 0.001 Seconds
(without alignments)
124.416 Million cell updates/sec

Title: US-09-920-394-3
Perfect score: 1728
Sequence: 1 tgtcgcccttcacgatgtgg.....catagagctgtgaatgaaga 1728

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 0.5

Searched: 3 seqs, 36 residues

Total number of hits satisfying chosen parameters: 6

Minimum DB seq length: 8
Maximum DB seq length: 50

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 3 summaries

Database : rni3.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	12	0.7	12	1	US-09-593-323-45	Sequence 45, Appl
2	12	0.7	12	1	US-09-594-108-45	Sequence 45, Appl
3	12	0.7	12	1	US-09-344-300-45	Sequence 45, Appl

ALIGNMENTS

RESULT 1
US-09-593-323-45
; Sequence 45, Application US/09593323
; Patent No. 6265213
; GENERAL INFORMATION:
; APPLICANT: Morgan, Antony R.
; APPLICANT: Severini, Alberto
; TITLE OF INVENTION: Compositions and Methods for Determining the Activity
; TITLE OF INVENTION: of DNA-Binding Proteins and of Initiation of
; TITLE OF INVENTION: Transcription
; FILE REFERENCE: DNAB-02921
; CURRENT APPLICATION NUMBER: US/09/593,323
; CURRENT FILING DATE: 2000-06-13
; PRIOR APPLICATION NUMBER: 09/344,300
; PRIOR FILING DATE: 1999-06-24
; NUMBER OF SEQ ID NOS: 72
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 45
; LENGTH: 12
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-09-593-323-45

Query Match 0.7%; Score 12; DB 1; Length 12;
Best Local Similarity 100.0%; Pred. No. 0.87;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy        927 GAAAATGAAATT 938
              ||||||||||||
Db          1 GAAAATGAAATT 12
```

RESULT 2
US-09-594-108-45
; Sequence 45, Application US/09594108
; Patent No. 6284468
; GENERAL INFORMATION:
; APPLICANT: Morgan, Antony R.
; APPLICANT: Severini, Alberto
; TITLE OF INVENTION: Compositions and Methods for Determining the Activity
; TITLE OF INVENTION: of DNA-Binding Proteins and of Initiation of
; TITLE OF INVENTION: Transcription
; FILE REFERENCE: DNAB-02921
; CURRENT APPLICATION NUMBER: US/09/594,108
; CURRENT FILING DATE: 2000-06-13
; PRIOR APPLICATION NUMBER: 09/344,300
; PRIOR FILING DATE: 1999-06-24
; NUMBER OF SEQ ID NOS: 72
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 45
; LENGTH: 12
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-09-594-108-45

Query Match 0.7%; Score 12; DB 1; Length 12;
Best Local Similarity 100.0%; Pred. No. 0.87;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy        927 GAAAATGAAATT 938
              ||||||||||||
Db          1 GAAAATGAAATT 12
```

RESULT 3
US-09-344-300-45
; Sequence 45, Application US/09344300B
; Patent No. 6297013
; GENERAL INFORMATION:
; APPLICANT: Morgan, Antony R.
; APPLICANT: Severini, Alberto
; TITLE OF INVENTION: Compositions and Methods for Determining the Activity
; TITLE OF INVENTION: of DNA-Binding Proteins and of Initiation of
; TITLE OF INVENTION: Transcription
; FILE REFERENCE: DNAB-02921
; CURRENT APPLICATION NUMBER: US/09/344,300B
; CURRENT FILING DATE: 1999-06-24
; NUMBER OF SEQ ID NOS: 72
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 45
; LENGTH: 12
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
US-09-344-300-45

Query Match 0.7%; Score 12; DB 1; Length 12;
Best Local Similarity 100.0%; Pred. No. 0.87;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy        927 GAAAATGAAATT 938
              ||||||||||||
Db          1 GAAAATGAAATT 12
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Search completed: December 8, 2004, 07:24:14
Job time : 0.001 secs